

Claims

1. Carrier (1, 5, 16) for supporting and engaging semiconductor products (12, 13, 18) during separating of the products (12, 13, 18) using laser light,
5 **characterized in that** the carrier (1, 5, 16) comprises a plate (1, 5, 16) provided with a pattern of holes (2) arranged in a flat carrying side (19) of the plate (1, 5, 16), and that the plate (1, 5, 16) is manufactured from a material at least substantially not absorbing the laser light.
- 10 2. Carrier (1, 5, 16) as claimed in claim 1, **characterized in that** the plate (1, 5, 16) is manufactured from glass or ceramic.
3. Carrier (1, 5, 16) as claimed in claim 1 or 2, **characterized in that** the cross-section through the holes (3, 6) close to the carrying side (19) of the plate (1, 5, 16) is
15 larger than at a distance from the carrying side (19).
4. Carrier (1, 5, 16) as claimed in claim 3, **characterized in that** the holes (3, 6) have a top angle between 15 and 45°, preferably a top angle of 30°.
- 20 5. Carrier (1, 5, 16) as claimed in any of the foregoing claims, **characterized in that** the pattern of holes (2) is grid-shaped and the pitch between the holes (3, 6) is greater than 200 µm.
6. Holder (4) for supporting and engaging semiconductor products (12, 13, 18) during separating of the products (12, 13, 18) using laser light, comprising a carrier (1, 5, 16) as claimed in any of the foregoing claims, and means (7, 8, 9, 10, 11) for
25 generating underpressure connecting onto the side of the plate (1, 5, 16) remote from the carrying side (19).
- 30 7. Holder (4) as claimed in claim 6, **characterized in that** the means (7, 8, 9, 10, 11) for generating underpressure connecting onto the side of the plate (1, 5, 16) remote from the carrying side (19) are formed by a chamber (7) connecting onto the carrier (1, 5, 16) and an extractor (11) connecting onto the chamber (7).

8. Holder (4) as claimed in claim 6 or 7, **characterized in that** the chamber (7) is also provided with positioning means for the carrier (1, 5, 16).
- 5 9. Laser cutting device for supporting and engaging semiconductor products (12, 13, 18) during separating of the products (12, 13, 18) using laser light, provided with a holder (4) as claimed in any of the claims 6-8, wherein the laser source is located on the carrying side (19) of the plate (1, 5, 16).
- 10 10. Method for supporting and engaging semiconductor products (12, 13, 18) during separating of the products (12, 13, 18) using laser light, comprising the processing steps of:
- A) placing an assembly of semiconductor products (12, 13) for separating onto a flat plate (1, 5, 16) provided with a pattern of holes (2),
- 15 B) applying an underpressure to the holes (3, 6) of the pattern of holes (2) such that the assembly of semiconductor products (12, 13) is drawn against the plate (1, 5, 16),
- C) directing at least one laser beam onto the assembly and cutting through the assembly (12, 13) where this is desired by means of mutual displacement of the laser source and the flat plate (1, 5, 16) such that each severed semiconductor product (18) is still
- 20 connected to at least one hole (3, 6) in the flat plate (1, 5, 16), and
- D) taking the separated products (18) from the plate (1, 5, 16).
11. Method as claimed in claim 10, **characterized in that** the underpressure on the holes (3, 6) is at least partly relieved before the separated products (18) are removed
- 25 from the plate (1, 5, 16).
12. Method as claimed in claim 10 or 11, **characterized in that** the assembly of semiconductor products (12, 13) is drawn against the plate (1, 5, 16) during processing step B) such that possible deviations in the flatness in the contact side of the assembly
- 30 are removed by the suction of the plate (1, 5, 16).